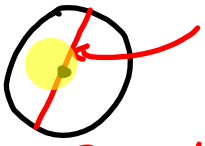
Geometry: 10.2 Arc Measures

This chapter deals with Circles. We'll be covering all the relevant terminology and facts about circles over the next several lessons.

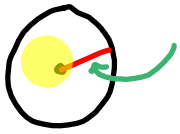
Key Terms.

Diameter: The distance from one end of a circle to another, through the center



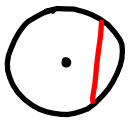
$\frac{1}{2} \cdot$ diameter = radius

Radius: The distance from the edge of a circle to the center

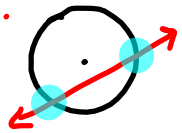


2 · radius = diameter

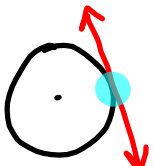
Chord: a line connecting one point on the edge of a circle to another point on the edge of a circle (Doesn't have to go through center)



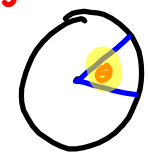
Secant Line: A Line that hits a circle in 2 spots.



Tangent Line: A Line that hits a circle in 1 spot

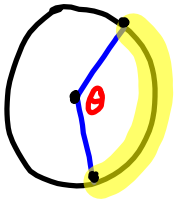


Central Angle: An angle with a vertex at the center of a circle.



Arc: The distance around the edge of a circle from one side of a central angle to another

Ex:

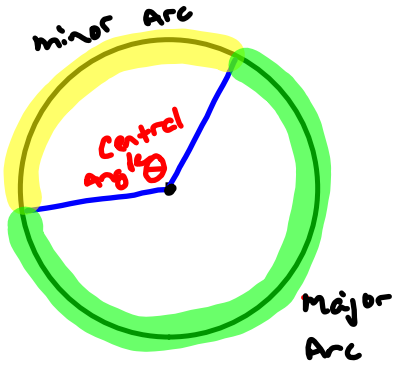


Measured as an angle!!

↑ Loose Definition.

10.2 Arc Measures

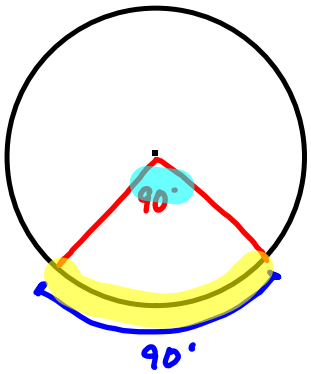
Minor Arcs and Major Arcs:



minor arcs : $< 180°$

major arcs : $> 180°$

Central Angles and Arc Measures:

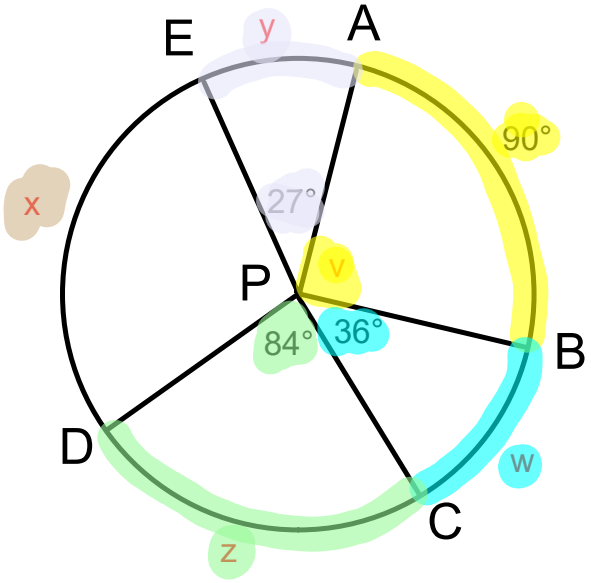


Central Angle measures : 90°

the (minor) arc measures : 90°

the minor Arc measures the Same as the central Angle. !

Ex: State the missing arc lengths and central angles in the figure below.



Central Angles measure the same as their minor Arc

V = 90°

W = 36°

Z = 84°

Y = 27°

State both Major and Minor Arcs for the following

Arc $\overset{\frown}{EC}$ = 27+90+36

minor : 153°

Arc $\overset{\frown}{DB}$ = 84+36

major : 360-153 207°

minor : 120°

Arc $\overset{\frown}{AC}$ = 360-120

major : 240°

90+36 = 126

minor : 126°

360 - 126

major : 234°

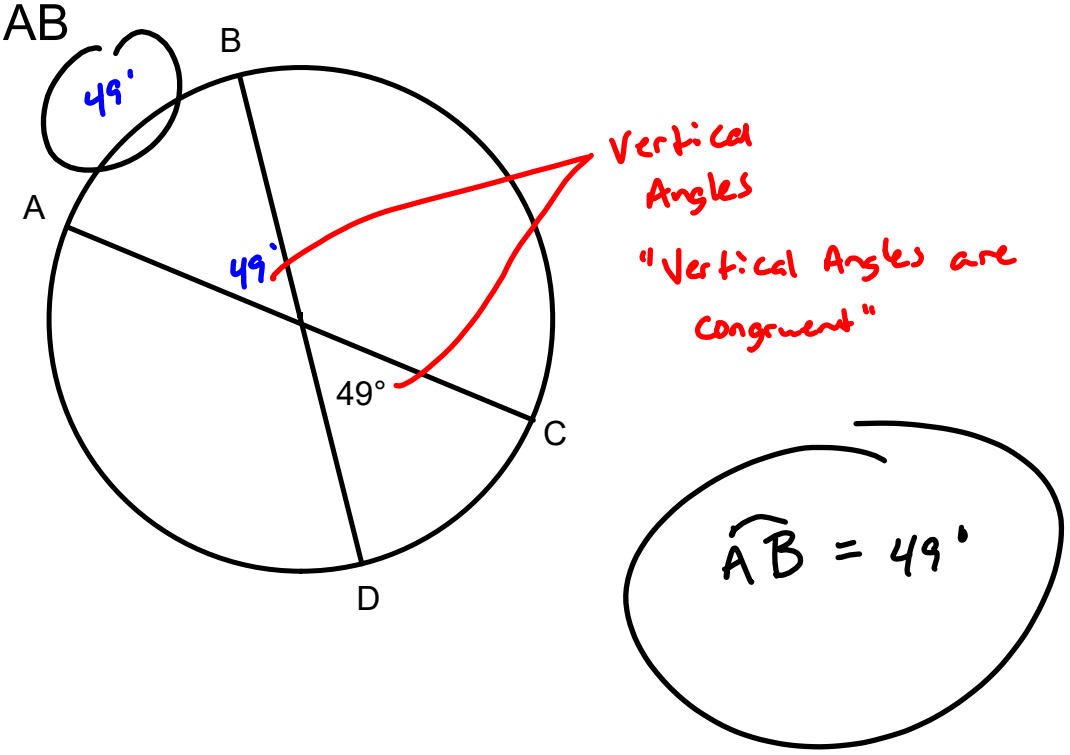
Finding x: All Arcs around a circle add to 360°

So 90+36+84+27 = 237

360 - 237 = 123°

X = 123°

Last Example: Find the measure of major and minor arc AB



Homework:

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7-17 (on 7-14 just find the measure of the arcs. Don't label them as major/minor/semicircle)